# Aerial Delivery and Field Services Department

# ***Malfunction Investigating and Reporting***

# Aerial Delivery and Field Services Department

## *Terminal Learning Objective*

**In a class room environment each student must**

**know the qualifications, duties, and**

**responsibilities of a Malfunction Officer/NCO**

**IAW AR-59-4/AFJ 13-210(I)/OPNAVINST 4630.24C/**

**MCO 13480.1B**

# Aerial Delivery and Field Services Department

## ***Terminal Learning Objective (cont)***

**In a class room environment each student will be able to perform the duties, and responsibilities of a Malfunction Officer/NCO IAW AR-59-4/AFJ 13-210(I)/OPNAVINST 4630.24C/ MCO 13480.1B**

# Aerial Delivery and Field Services Department

## References

- **AR 59-4/AFJI 13-210(I)/OPNAVINST 4630.24D/MCO 13480.1C: Joint Airdrop Inspection Records, Malfunction Investigations, and Activity Reporting**
- **FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 137C7-1-5 : Airdrop Platforms**
- **AR 750-32: Airdrop, Parachute Recovery, and Aircraft Personnel Escape Systems**
- **FM 3-21.220/MCWP 3-15.7/AFMAN 11-420/NAVSEA SS400-AF-MMO-010 : Static Line Parachuting Techniques and Training**

# Aerial Delivery and Field Services

## Safety Requirements

# Aerial Delivery and Field Services Department

## ***Environmental Considerations***

# Aerial Delivery and Field Services Department

## *Purpose of The Malfunction Officer/NCO*

**In all incidents or malfunctions the Malfunction Officer/NCO will immediately conduct an on-site investigation to determine, if possible, the cause(s) and to protect the physical evidence which is extremely perishable**

# Aerial Delivery and Field Services Department

## *Priority of a Malfunction*

**The investigation of personnel parachute and equipment malfunctions/incidents shall receive the highest priority, secondary only to medical aid for the injured. It shall supersede all other aspects of the operation, including any tactical exercise planned in conjunction with the airborne operation**

# Aerial Delivery and Field Services Department

***The Malfunction Officer/NCO***

# Aerial Delivery and Field Services Department

## *Qualifications of The Malfunction Officer/NCO*

***Army Qualification Requirements***

**Malfunction Officer/NCO shall be:**

- **An Officer, Warrant Officer or NCO (minimum 92RA9 grade of E-5)**
- **A trained Parachute Rigger (92R, 921A or 92AR9) IAW AR 750-32**
- **Familiar with the airdrop equipment being utilized**

# Aerial Delivery and Field Services Department

## Qualifications of The Malfunction Officer/NCO

***Army Qualification Requirements (cont)***

**Malfunction Officer/NCO must be qualified for:**

**Static line personnel parachutes not including Ram Air**

**Personnel Parachute System (RAPPS)**

- **Pack-in-process inspector certified**
- **Malfunction Officer trained and certified**

# Aerial Delivery and Field Services Department

## *Qualifications of The Malfunction Officer/NCO*

***Army Qualification Requirements (cont)***

**RAPPS (to include static line deployed RAPPS if applicable)**

- **Pack-in-process inspector certified**
- **Malfunction Officer trained and certified**

# Aerial Delivery and Field Services Department

## *Qualifications of The Malfunction Officer/NCO*

***Army Qualification Requirements (cont)***

**Ram air cargo (RAC) airdrop**

- **Pack-in-process inspector certified**
- **Malfunction Officer trained and certified**
- **RAC trained and certified (if applicable)**

# Aerial Delivery and Field Services Department

## *Qualifications of The Malfunction Officer/NCO*

### ***Army Qualification Requirements (cont)***

**Cargo Airdrop**

- **JAI trained and certified (not required for door bundles)**
- **Malfunction Officer trained and certified**

# *Qualifications of the Malfunction Officer/NCO*

***Army Qualification Requirements (cont)***

- **Malfunction Officers will be trained and certified in accordance with the power point presentation and lesson plans provided by the USAQMC&S**
- **Individuals will be retrained and recertified annually**
- **Training/certification records will be maintained on file at the unit level**
- **The organization that provides the parachutes will provide the Malfunction Officer**

# ***Qualifications of The Malfunction Officer/NCO***

## ***Army Qualification Requirements (cont)***

***Exception:***

- **The MO qualifications may be waived to an MOS 92R1P(E-4 only) when recommended by the parachute rigger warrant officer (MOS 921A) in charge of that organization or other authorized unit supervisors in accordance with AR-750-32**
- **Qualified and authorized E-4 MOs will be limited to single ship missions only**
- **Army National Guard and U.S. Army Reserve personnel meeting above requirements are considered qualified MOs as civilian technicians**

# Aerial Delivery and Field Services Department

## *Qualifications of The Malfunction Officer/NCO (Cont)*

***Air Force Qualification Requirements***

**Malfunction Officer/NCO shall be:**

- **Minimum grade of E-4 and hold an Air Force Specialty Code (AFSC) of 1A2X1, 2T2X1 or 2A7X4**
- **Attend the Airdrop Load Inspector Certification Course**
- **Attend a Joint Airdrop Inspector (JAI) refresher course annually and be designated, in writing, by the unit commander**

# Aerial Delivery and Field Services Department

## *Qualifications of The Malfunction Officer/NCO (Cont)*

***Air Force Qualification Requirements (cont)***

- **For Air National Guard units, AFSC 1C2X1 and 1T2X1 personnel may also perform duties**
- **For Air Force Special Operations Command, Special Tactics Squadron, Parachute Rescue, Special Operations Weather Team unilateral operations, the drop zone (DZ) controller may be designated as the Malfunction Officer if an Air Force JAI is not available**

# Aerial Delivery and Field Services Department

## *Qualifications of The Malfunction Officer/NCO (Cont)*

### ***Navy Qualification Requirements***

**Malfunction Officer/NCO shall be:**

- **A Parachute Rigger NCO, (E4) or above, or a Jumpmaster qualified E-5 or above, and will be appointed, in writing, by the Commanding Officer**

# ***Qualifications of The Malfunction Officer/NCO (Cont)***

***Marine Corps Qualification Requirements***

**Malfunction Officer/NCO shall be:**

- **A Parachute Rigger NCO, E4 or above, or Jumpmaster qualified E5 or above, and must be appointed in writing by the Commanding Officer**
- **Must receive unit level refresher training annually**
- **Will be from the organization that provides the air items**

# Aerial Delivery and Field Services Department

## ***Duties and Responsibilities***

***Routine Procedures:***

- **Receive a briefing from the Parachute Rigging Facility (PRF) before assuming duties as the Malfunction Officer/NCO**
- **Review AR 59-4/AFJ 13-210(I)/OPNAVINST 4630.24D/MCO 13480.1C and unit Standard Operating Procedures prior to conducting duties**

# Aerial Delivery and Field Services Department

## *Duties and Responsibilities (Cont)*

***Routine Procedures (cont)***

- **Coordinate with the DZ party**
- **Check malfunction kit  for minimum required equipment**
- **Coordinate transportation and communication requirements**

# Aerial Delivery and Field Services Department

## *Minimum Required Equipment*

**Minimum Required Equipment IAW *AR 59-4/AFJ 13-10(I)/OPNAVINST 4630.24D/MCO 13480C***

- **Communication capability with the DZ Control Party**
- **Binoculars or night vision devices**
- **Transportation to move around the DZ**
- **A good quality camera (video camera preferred)**
- **Clerical supplies necessary for tagging equipment, taking statements, and initiating reports**

# Aerial Delivery and Field Services Department

## *Minimum Required Equipment (Cont)*

**Minimum Required Equipment IAW *AR 59-4/AFJ 13-10(I)/OPNAVINST 4630.24D/MCO 13480C (Cont)***

- **An approved wind meter**
- **Applicable DZ survey**

# Aerial Delivery and Field Services Department

## *Malfunction Officer/NCO Kit*

- **A copy of AR 59-4/AFI 13-210(I)/OPNAVINST 4630.24D/MCO 13480.1C**
- **DD Form 1748-2 (Airdrop Malfunction Report)**
- **DA Form 3161 (Temporary Hand Receipt)**
  - **Joint Services use equivalent forms**
- **DA Form 2823 (Sworn Statement Form)**
  - **Joint Services use equivalent forms**
- **Latex gloves, plastic bags, plastic tarps**

# Aerial Delivery and Field Services Department

## *Malfunction Officer/NCO Kit (Cont)*

- **Engineer tape with stakes**
- **Measuring tape**

# Aerial Delivery and Field Services Department

## ***Definition of a Malfunction***

**A malfunction is defined as “the failure of an airdrop item or component of an airdrop system to function as it was intended or designed,” whether the equipment failed due to human error, material failure or emergency procedures used**

# Aerial Delivery and Field Services Department

## ***Key Terms***

- **Partial Malfunction: The failure of an airdrop system to function properly to the point that the load or parachutist is subject to damage or injury**
- **Total Malfunction: The complete failure of the airdrop system to function as designed**
- **Airdrop Incident: Procedure which prevented the successful completion of any planned airdrop operation**

# Aerial Delivery and Field Services Department

## *Key Terms (Cont)*

- **Chain-of-Custody:** **A chronological written record of people who have had custody of evidence from the initial acquisition until final disposition**
- **On-site Investigation:** **Performed by the Malfunction Officer to collect data used to determine the cause of the malfunction**
- **Follow-On Investigation:** **Normally conducted by a board appointed under the appropriate regulation of the service involved**

# Aerial Delivery and Field Services Department

***Check on Learning***

# Aerial Delivery and Field Services Department

***Question: What is the minimum required equipment IAW AR 59-4/AFJ 13-210(I)/OPNAVINST 4630.24D/MCO 13480.1C?***

- **Communication capability with the DZ Control Party**
- **Binoculars or night vision devices**
- **Transportation to move on the DZ**
- **A good quality camera (video camera preferred**
- **Clerical supplies**
- **Approved wind meter**
- **Applicable DZ survey**

# Aerial Delivery and Field Services Department

***Question: What is the definition of a malfunction?***

1. **A malfunction is defined as "the failure of an airdrop item or component of an airdrop system to function as it was intended or designed," whether the equipment failed due to human error, material failure or emergency procedures used**

# Aerial Delivery and Field Services Department

***Break***

# Aerial Delivery and Field Services Department

***Procedures for Malfunction Investigations Involving No Serious Injuries IAW AR-59-4/AFJ 13-210(I)/OPNAVINST 4630.24D/MCO 13480.1C***

# Aerial Delivery and Field Services Department

## ***Malfunction Investigation Procedures No Serious Injuries***

**Conduct a complete on-site investigation of the malfunction IAW AR-59-4/AFJ 13-210(I)/OPNAVINST 4630.24D/MCO 13480.1C Chapter 3-2b. and Appendix B, Section B-4a**

# *Malfunction Investigation Procedures No Serious Injuries (Cont)*

- **Notify the PRF that provided the parachutes**
- **Ensure the Subject Matter Expert (SME) is asked for to assist the Malfunction Officer/NCO**

# *Malfunction Investigation Procedures No Serious Injuries (Cont)*

- **Secure the impact site**
- **Photograph all equipment and obvious defects, to include any damage caused by impact**
- **Sketch the impact site and show equipment relationships and exact location of impact site in relation to the DZ**

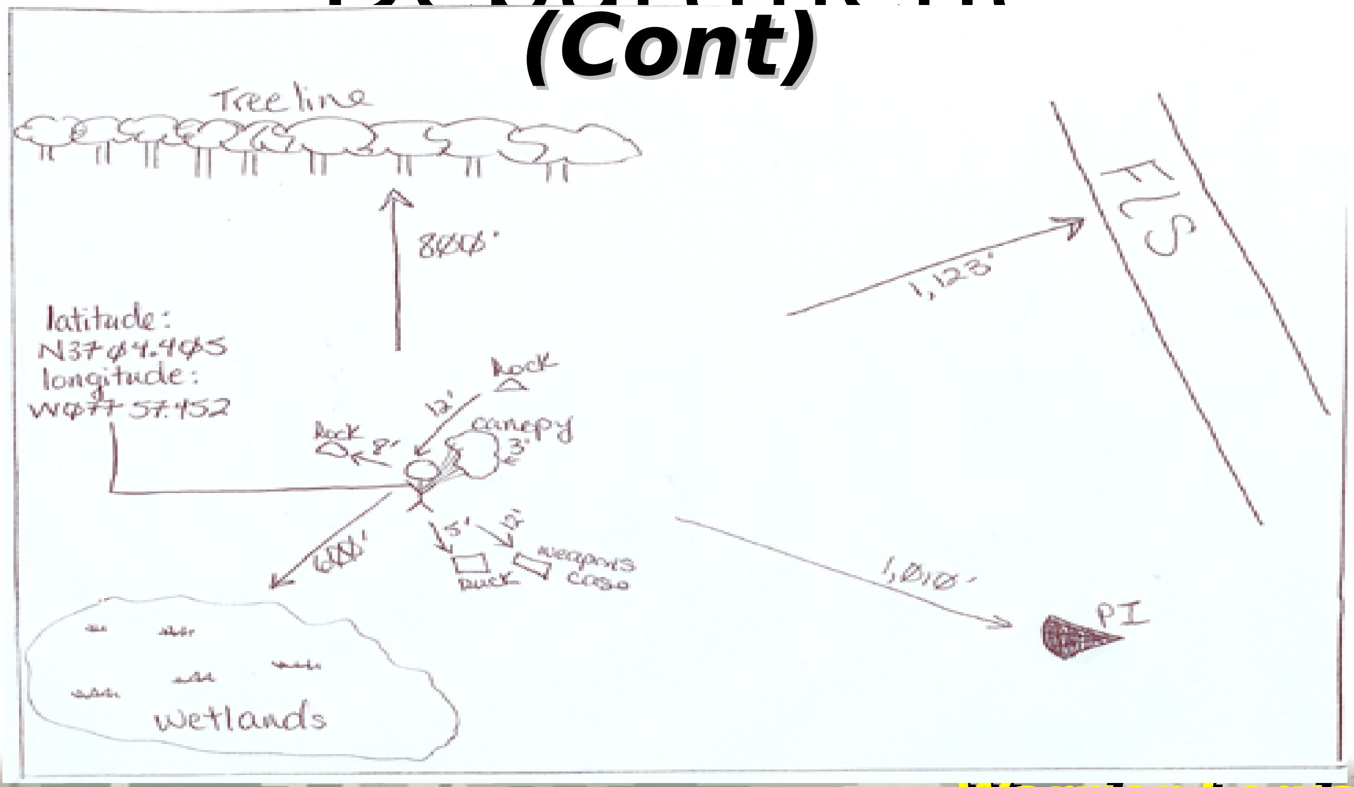
# Aerial Delivery and Field Services Department

## *Malfunction Investigation Procedures No Serious Injuries (Cont)*

**DZ Sketch Information:**

- **DZSO – name, rank, location on the DZ**
- **Assistant DZSO – name, rank, location on the DZ**
- **Malfunction Officer – name, rank, location on the DZ**
- **Assistant Malfunction Officer – name, rank, location on the DZ**
- **Impact point using grid coordinates**
- **Direction of flight**
- **Wind direction and speed**

# Malfunction Investigation Procedures No Serious Injuries (Cont)


Tree line
800'
FLS
1,123'
latitude:
N37 04.405
longitude:
W077 57.452
Rock
12'
canopy
3'
Rock
8'
5'
12'
Ruck
weapons case
600'
1,010'
PI
wetlands

# *Malfunction Investigation Procedures No Serious Injuries (Cont)*

**Obtain statements from:**

- **Preceding jumpers**
- **Subsequent jumpers**
- **Jumpmasters**
- **Safeties**
- **Ground observers, DZ party, other jumpers, etc**
- **Aircraft personnel (if possible)**

# Aerial Delivery and Field Services Department

## *Malfunction Investigation Procedures No Serious Injuries (Cont)*

**Procedures:**

- **Gather equipment, air items, and personal property involved in the malfunction. In addition gather all necessary clothing as soon as possible**
- **A hand receipt may be needed for accountability of confiscated equipment**

# Aerial Delivery and Field Services Department

## Malfunction Investigation Procedures No Serious Injuries (Cont)

- **Tag all items with date, time, location, type of incident, name, and unit of person involved**
- **The Malfunction Officer/NCO is responsible for maintaining the "chain of custody" for evidence**
- **Examine equipment component-by-component**
- **Conduct a TM 10-1670/TO 14D1-2 series/NAVAIR/NAVSEA series/rigger-type inspection in an appropriate area on all air items**

# Malfunction Investigation Procedures No Serious Injuries (Cont)

- **Ensure all air items and evidence is retained until the investigating authority releases them**
- **Release equipment not required for further investigation**

# *Malfunction Investigation Procedures No Serious Injuries (Cont)*

***During an investigation for personnel parachute jumps if intentional acts of tampering or sabotage is suspected:***

- **The DZSO will immediately notify the Military Law Enforcement Authorities**
- **When Law Enforcement arrives the Malfunction Officer/NCO will brief them on actions already taken and release all evidence into their custody**

# *Malfunction Investigation Procedures No Serious Injuries (Cont)*

## Appendix B

**Appendix B of AR 59-4/AFJ 13-10(I)/OPNAVINST 4630.24D/MCO 13480.1C is a checklist for personnel parachute malfunction investigations and contains guidelines for component inspection procedures**

# Aerial Delivery and Field Services Department

***Check on Learning***

# Aerial Delivery and Field Services Department

***Question: Who is responsible for maintaining the "chain of custody" during a malfunction investigation?***

- **The Malfunction Officer/NCO**

# Aerial Delivery and Field Services Department

***Question: What does Appendix B cover?***

- **Appendix B is a checklist for Personnel Parachute Malfunctions Investigations**

# Aerial Delivery and Field Services Department

**_Break_**

# Aerial Delivery and Field Services Department

## ***Procedures for Malfunction Investigations Involving Serious Injuries or Death IAW AR 59-4/AFJ 13-210(I)/OPNAVINST 4630.24D/MCO 13480.1C***

# Aerial Delivery and Field Services Department

## *Malfunction Investigation Procedures Serious Injuries or Death*

**Conduct a complete on-site investigation of the malfunction IAW:**

- **AR-59-4/AFJ 13-210(I)/OPNAVINST 4630.24D/MCO 13480.1C**
- **Chapter 3-2c. and Appendix B, Section B-4b**

# *Malfunction Investigation Procedures Serious Injuries or Death (Cont)*

- **Notify the Rigger Facility SME to assist the Malfunction Officer /NCO**
- **Ensure the DZSO immediately notifies the Military Law Enforcement Authorities**
- **Ensure the DZSO notifies the aircraft involved**
- **Immediately impound the Parachute Log Record**

# *Malfunction Investigation Procedures Serious Injuries or Death (Cont)*

**Access to the Accident Scene:**

- **Restricted to the Malfunction Officer, the advising SME, responding Military Law Enforcement Authorities, DZSO and medical personnel**
- **Attempt to limit Command Personnel present and disperse on-lookers**
- **The Malfunction Officer will immediately initiate an on-site investigation**

# Aerial Delivery and Field Services Department

## Malfunction Investigation Procedures Serious Injuries or Death (Cont)

**On-Site Actions:**

**These Are The First Critical Steps**

- **Immediately place the impact site off-limits**
- **Posts guards to ensure the integrity of the accident scene; ensure site remains undisturbed**
- **Investigation will not interfere with any required medical support**

# Malfunction Investigation Procedures Serious Injuries or Death (Cont)

**Obtain statements from:**

- **Preceding jumpers**
- **Subsequent jumpers**
- **Jumpmasters**
- **Safeties**
- **Ground observers, DZ party, other jumpers, etc**
- **Aircraft personnel (if possible)**

# Aerial Delivery and Field Services Department

## Malfunction Investigation Procedures Serious Injuries or Death (Cont)

**On-site Actions (cont):**

- **Ensure statements include: Name, Unit and POC**
- **Photograph all equipment, parachutist, impact site and any obvious defects in the equipment**
- **Sketch the impact site**

# *Malfunction Investigation Procedures Serious Injuries or Death (Cont)*

**On-site actions (cont):**

- **Gather and secure all clothing, equipment, air items, and personal property involved in the malfunction. Record with hand receipt for accountability and release only to the appropriate SME**
- **Tag all items with time, date, location, type of incident, name, and unit of person involved.**

# Aerial Delivery and Field Services Department

## ***Malfunction Investigation Procedures Serious Injuries or Death (Cont)***

**On-site actions (cont):**

- **Impound the parachute log record book ASAP limiting access to appointed investigative authorities**
- **Conduct a detailed component-by-component examination of all equipment after the parachutist has been evacuated**

# Aerial Delivery and Field Services Department

## ***Malfunction Investigation Procedures Serious Injuries or Death (Cont)***

**On-site actions (cont):**

- **Do not remove entanglements**
- **Ensure equipment is tagged, parachutes are loosely rolled and bagged when the on-site investigation is complete**
- **Secure and release only to assigned investigating SME**
- **Request D-bags be segregated, undisturbed, and advise Safeties – Do not untangle the D-bags**

# Aerial Delivery and Field Services Department

## Malfunction Investigation Procedures Serious Injuries or Death (Cont)

**On-site actions (cont):**

- **Ensure the aircraft involved is notified as soon as possible for inspection before being reconfigured**
- **Secure a copy of the manifest and reconstruct the stick from manifests if needed**
- **Obtain the D-bag serial number from log record book and validate the D-bag by serial number**

# Aerial Delivery and Field Services Department

## Malfunction Investigation Procedures Serious Injuries or Death (Cont)

**On-site actions (cont):**

- **Conduct a TM 10-1670/TO 14D1-2 series/NAVAIR/NAVSEA series/rigger-type inspection in an appropriate area on all air items**
- **Complete on-site investigation IAW AR 59-4/AFJ 13-210(I)/OPNAVINST 4630.24D/MCO 13480.1C App B**

# Aerial Delivery and Field Services Department

## Malfunction Investigation Procedures Serious Injuries or Death (Cont)

**On-site actions (cont):**

- **If medical support determines jumper must be cut from parachute system the Malfunction Officer will assist if requested**
- **Record/Tag all areas of parachute system that are cut by medical personnel to distinguish from incident related damage**
- **Medical personnel secure/preserve all clothing and equipment removed from impact site**

# *Malfunction Investigation Procedures Serious Injuries or Death (Cont)*

**On-site actions (cont):**

- **If suspected tampering/sabotage notify Military Law Enforcement Authorities**
- **Be prepared to brief Authorities**
- **If tampering/sabotage is evident – investigation ceases and all findings are turned over to investigating agency**
- **If agency accepts findings of no tampering Malfunction Officer investigation continues**

# *Malfunction Investigation Procedures Serious Injuries or Death (Cont)*

- **All air items involved in a fatality must be secured until 90 days after completion of the investigation and submission of all reports IAW applicable regulations**
  - **This is done should there be any inquiries pertaining to the investigation or if for any reason any part of the investigation needs to be reopened**

# Aerial Delivery and Field Services Department

## ***Check on Learning***

# Aerial Delivery and Field Services Department

***Question: In a malfunction involving serious injury or death, what should the Malfunction Officer/NCO do with the Parachute Log Record?***

- **The Malfunction Officer / NCO should impound it**

# Aerial Delivery and Field Services Department

***Question: All air items involved in a fatality must be secured for how many days after completion of the investigation and submission of all reports and why?***

- **90 days**
- **In case of any inquiries or any part of the investigation needs to be reopened**

# Aerial Delivery and Field Services Department

**_Break_**

# Aerial Delivery and Field Services Department

***Procedures for Malfunction Investigations Involving Airdrop Loads***

***IAW AR 59-4/AFJ 13-210(I)/OPNAVINST 4630.24D/MCO 13480.1C***

# Aerial Delivery and Field Services Department

## Malfunction Investigation Procedures Involving Airdrop Loads

**Conduct a complete on-site investigation of the malfunction IAW AR-59-4/AFJ 13-210(I)/OPNAVINST 4630.24D/MCO 13480.1C Chapter 3 and Appendix B-16**

# Malfunction Investigation Procedures Involving Airdrop Loads (Cont)

## Appendix B

**Appendix B of AR 59-4/AFJ 13-10(I)/OPNAVINST 4630.24D/MCO 13480.1C is a checklist for airdrop load malfunction investigations which contains guidelines for component inspection procedures**

# Aerial Delivery and Field Services Department

## Malfunction Investigation Procedures Involving Airdrop Loads (Cont)

**The malfunction officer will categorize malfunctions by the phase in which they occur and also restrict the investigations to factors that could have caused or contributed to the malfunction to save time and resources.**

# *Malfunction Investigation Procedures Involving Airdrop Loads (Cont)*

**Phases of Airdrop:**

- **Extraction Phase**
- **Deployment/Recovery Phase**
- **Release Phase**

# Aerial Delivery and Field Services Department

## Malfunction Investigation Procedures Involving Airdrop Loads (Cont)

**Phases of Airdrop (Cont):**

**Extraction Phase:**

- **The period of time that begins with the activation of the aerial delivery system and continues until the extraction force transfers to recovery parachute deployment**

# Aerial Delivery and Field Services Department

## *Malfunction Investigation Procedures Involving Airdrop Loads (Cont)*

**Phases of Airdrop (Cont):**

**Deployment/Recovery Phase:**

- **The period of time that begins with the transfer of force extraction to recovery parachute deployment and continues until load impact**

## Malfunction Investigation Procedures Involving Airdrop Loads (Cont)

**Phases of Airdrop (Cont):**

**Release Phase:**

- **This phase overlaps the deployment/recovery phase, but concerns only the functioning of the release assembly**
  - **Starts when timer actuates**
  - **Continues until the load impacts the ground and parachute release occurs**

# Aerial Delivery and Field Services Department

## Malfunction Investigation Procedures Involving Airdrop Loads (Cont)

### Low Velocity Airdrop Loads

**Failure of the Extraction Parachute to Deploy or Inflate:**

- **Did the aircraft extraction parachute release mechanism function properly?**
- **Were bag closing ties correctly made and pendulum lines properly installed?**
- **Was the parachute safety loop free from the bent V-ring?**

# Aerial Delivery and Field Services Department

## ***Malfunction Investigation Procedures Involving Airdrop Loads (Cont)***

**Low Velocity Airdrop Loads (Cont)**

**Failure or Delay in the Load Extraction:**

- **Did the extraction parachute appear to fully inflate?**
- **Was positive aft restraint removed?**
- **Was the correct number of detents and restraints settings used for the load?**

# ***Malfunction Investigation Procedures Involving Airdrop Loads (Cont)***

## **Low Velocity Airdrop Loads (Cont)**

**Failure or Delay in the Load Extraction (Cont):**

- **Was the correct extraction line used and connected?**
- **Was the platform damaged (answer only when a load did not exit)?**

# Aerial Delivery and Field Services Department

## Malfunction Investigation Procedures Involving Airdrop Loads (Cont)

### Low Velocity Airdrop Loads (Cont)

**Failure to Transfer the Extraction Force to Deployment:**

- **Were actuators installed in the correct platform rail position (check the arm and foot to indent clearances)?**
- **Were actuator arm safety pins removed and correctly stowed?**

# Malfunction Investigation Procedures Involving Airdrop Loads (Cont)

## Low Velocity Airdrop Loads (Cont)

**Failure to Transfer the Extraction Force to Deployment (cont):**

- **Was the EFTC cable secured or attached to the actuator and latch assembly with cable clevis pins installed?**
- **Was the EFTC cable the correct length and properly routed and secured?**

# Aerial Delivery and Field Services Department

# ***Malfunction Investigation Procedures Involving Airdrop Loads (Cont)***

**Low Velocity Airdrop Loads (Cont)**

**Failure of Recovery Parachutes to Deploy:**

- **Was the deployment line attached to the extraction system and the parachutes?**
- **Was the deployment line misrouted?**
- **Were the parachute restraint and release straps properly attached?**
- **What was the condition of the release knives?**

# Malfunction Investigation Procedures Involving Airdrop Loads (Cont)

**Low Velocity Airdrop Loads (Cont)**

**Static and or Release Line Systems (Dual Row Airdrop System [DRAS], Enhanced Container Delivery System [ECDS], and Door Bundles):**

- **Was the static line properly rigged and connected to the anchor cable?**
- **Was the static line properly rigged and connected to the parachute?**
- **Was the release line rigged and connected correctly?**

# Aerial Delivery and Field Services Department

## *Malfunction Investigation Procedures Involving Airdrop Loads (Cont)*

### Low Velocity Airdrop Loads (Cont)

**Failure of the Suspension System:**

- **Did the load suspension points fail?**
- **Did the suspension slings or attaching hardware fail?**
- **Were the correct slings used?**

# Aerial Delivery and Field Services Department

## Malfunction Investigation Procedures Involving Airdrop Loads (Cont)

**Low Velocity Airdrop Loads (Cont)**

**Failure of the Suspension System (cont):**

- **Were the slings correctly attached to the parachute release and the load or platform?**
- **Were slings correctly routed to the suspension points?**
- **Was protective padding used where it was required?**

# Malfunction Investigation Procedures Involving Airdrop Loads (Cont)

## Low Velocity Airdrop Loads (Cont)

**Failure of Recovery Parachute(s) to Fully Inflate:**

- **Were reefing line cutters armed and cotter pins removed?**
- **Did the cutters fire?**
- **Did the cutters cut the reefing line?**

# ***Malfunction Investigation Procedures Involving Airdrop Loads (Cont)***

## Low Velocity Airdrop Loads (Cont)

**Failure of Recovery Parachute(s) to Fully Inflate (cont):**

- **Was the reefing line the proper length?**
- **Was the reefing line entangled in the reefing rings or suspension lines?**
- **Were the canopy, suspension lines, and connector link ties correctly made?**

# Aerial Delivery and Field Services Department

## *Malfunction Investigation Procedures Involving Airdrop Loads (Cont)*

**Low Velocity Airdrop Loads (Cont)**

**Midair Release (check hydraulic releases IAW FM 4-20.102):**

- **At what point did the midair separation occur?**
- **Did the release activate prior to the load stabilizing?**
- **Were the releases attached to the parachutes and the load?**

# Malfunction Investigation Procedures Involving Airdrop Loads (Cont)

## Low Velocity Airdrop Loads (Cont)

**Midair Release (check hydraulic releases IAW FM 4-20.102) (cont):**

- **Were the releases properly rigged?**
- **Was the timer serviceable when tested after the drop? What deficiencies were noted (specify part, M-1 or M-2 release)?**

# Aerial Delivery and Field Services Department

## ***Malfunction Investigation Procedures Involving Airdrop Loads (Cont)***

**Low Velocity Airdrop Loads (Cont)**

**Failure to Disconnect for M-1 or M-2 Parachute**

**Releases:**

- **Did a no-load condition occur on impact?**
- **Did the release upper-suspension link rotate to the release position?**

# Malfunction Investigation Procedures Involving Airdrop Loads (Cont)

## Low Velocity Airdrop Loads (Cont)

**Failure to Disconnect for M-1 or M-2 Parachute Releases (cont):**

- **Was the arming wire lanyard the correct length and was the arming wire pulled from the timer?**
- **Did the timer keys retract and the timer fall in the guide block?**
- **Was the timer serviceable when it was tested after the drop?**

# Aerial Delivery and Field Services Department

# ***Malfunction Investigation Procedures Involving Airdrop Loads (Cont)***

**Container Delivery Systems**

**Failure of the Containers to Exit the Aircraft:**

- **Was the release gate properly rigged?**
- **Was the knife sharp and attached?**
- **Did the aircraft release system function properly?**
- **Condition of the rollers and skid board if the containers were jammed in the aircraft?**

# Malfunction Investigation Procedures Involving Airdrop Loads (Cont)

## Container Delivery Systems (Cont)

**Failure of the Recovery Parachutes to Deploy and Inflate:**

- **Were the parachute static lines attached to the anchor cables and were the anchor cable stops installed at the prescribed location?**
- **Were the parachutes attached to the containers?**

# ***Malfunction Investigation Procedures Involving Airdrop Loads (Cont)***

## **Container Delivery Systems (Cont)**

**Failure of the Recovery Parachutes to Deploy and Inflate (cont):**

- **Were the pilot chutes attached to the cargo parachutes?**
- **Were the bag closing ties made with prescribed materials?**
- **Were the canopy and suspension line ties properly installed with prescribed material?**

# Aerial Delivery and Field Services Department

***Check on Learning***

# Aerial Delivery and Field Services Department

***Question: What are the three phases involved in a low velocity airdrop?***

1. **Extraction**
2. **Deployment/Recovery**
3. **Release**

# Aerial Delivery and Field Services Department

***Question: Where do you find the checklist for an airdrop load malfunction?***

**AR 59-4/AFJ 13-210(I)/Air Force/OPNAVINST 4630.24D/MCO 13480.1C Appendix B**

# Aerial Delivery and Field Services Department

***Break***

# Aerial Delivery and Field Services Department

## *Reporting Procedures For Malfunction Investigations IAW AR 59-4/AFJ 13-210(I)/OPNAVINST 4630.24D/MCO 13480.1C*

# ***Initial Serious Injury/Death Reporting***

**If serious injury or death results from a malfunction, an electronic mail message or telephonic message will be sent within 12 hours of the malfunction to the Director, Aerial Delivery and Field Services Department, Fort Lee, VA**

# Aerial Delivery and Field Services Department

## *Website*

**DD Form 1748-2**

**Airdrop Malfunction Report**

**Website and Use of Forms:**

**www.quartermaster.army.mil/adfsd**

# Aerial Delivery and Field Services Department

## *Fatality Malfunction Report*

**Once electronically/telephonically reported: One copy of the final investigation report and DD Form 1748-2 will be forwarded to Fort Lee within 10 calendar days after completion of the fatality investigation.**

# Aerial Delivery and Field Services Department

## *Reporting Summary*

**Reporting Requirements Summary:**

- **Command channel report (CDR, USAQMC&S, Ft Lee, VA)**
- **Electronic or telephone report (serious injury or death/12 hours)**
- **Quality deficiency report**
- **Lost time**
- **DD Form 1748-2, Airdrop Malfunction Report (personnel/cargo-5 days)**

# Aerial Delivery and Field Services Department

## ***Aerial Delivery and Field Services Department Reporting POCs***

**E-mail: atsmadfsd@lee.army.mil**

**If e-mail capability is not available call: DSN 687-**

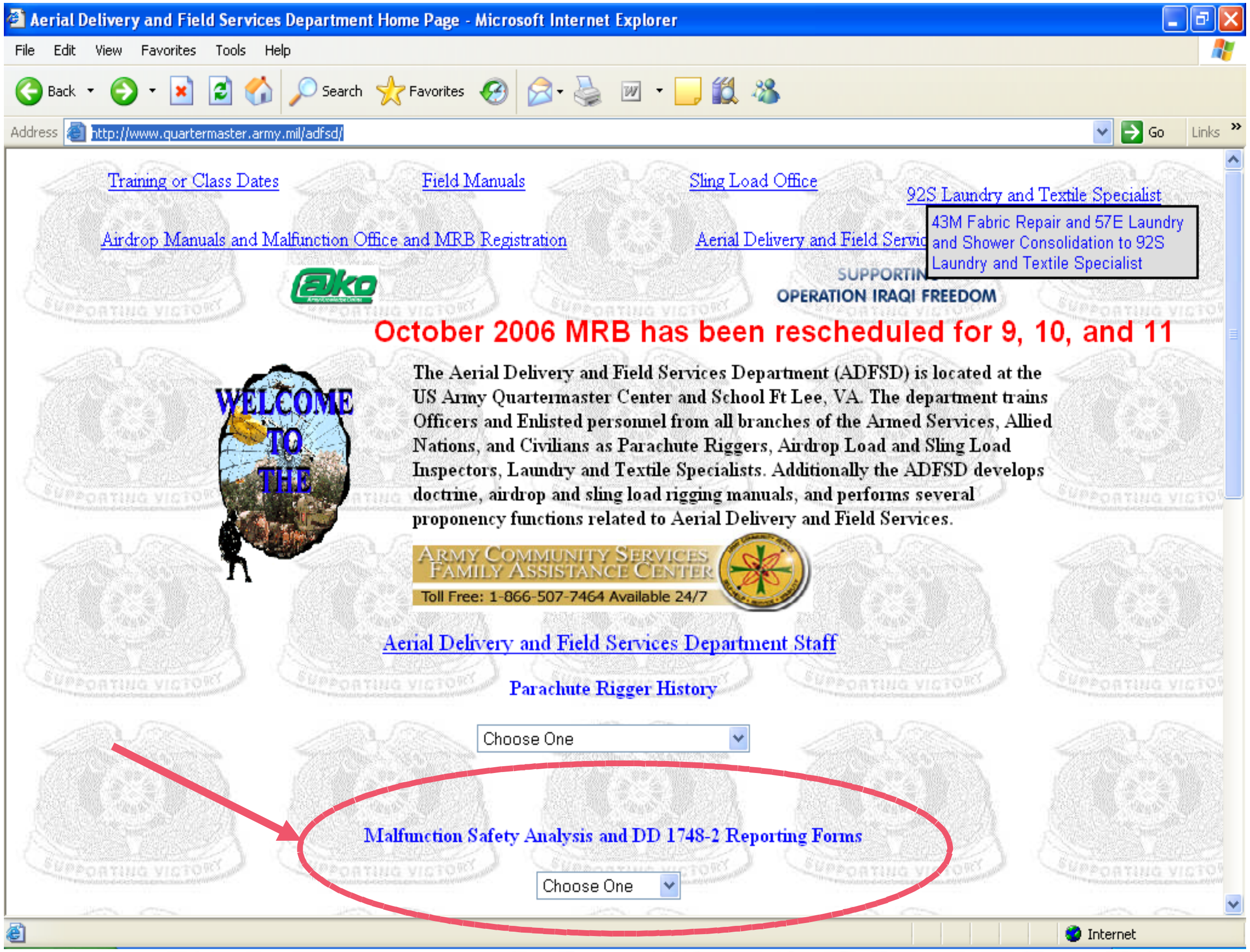
**5370/3178 or commercial (804) 734-5370/3178**

# Aerial Delivery and Field Services Department

## Completed Malfunction Report

**Other than for a fatality, one copy of the completed report will be forwarded through appropriate channels to the Director, Aerial Delivery and Field Services Department, ATTN: ATSM-ADFSD, 710 A Avenue Fort Lee, VA 23801-1502 within 5 workdays after the malfunction occurs**

# Aerial Delivery and Field


Aerial Delivery and Field Services Department Home Page - Microsoft Internet Explorer
File
Edit
View
Favorites
Tools
Help
Back
Search
Favorites
Address
Go
Links
Choose One
Choose One
Internet

http://www.quartermaster.army.mil/adfsd/

Training or Class Dates

Field Manuals

Sling Load Office

92S Laundry and Textile Specialist

43M Fabric Repair and 57E Laundry and Shower Consolidation to 92S Laundry and Textile Specialist

Airdrop Manuals and Malfunction Office and MRB Registration

Aerial Delivery and Field Servic

SUPPORTIN
OPERATION IRAQI FREEDOM

WELCOME TO THE

October 2006 MRB has been rescheduled for 9, 10, and 11

The Aerial Delivery and Field Services Department (ADFSD) is located at the US Army Quartermaster Center and School Ft Lee, VA. The department trains Officers and Enlisted personnel from all branches of the Armed Services, Allied Nations, and Civilians as Parachute Riggers, Airdrop Load and Sling Load Inspectors, Laundry and Textile Specialists. Additionally the ADFSD develops doctrine, airdrop and sling load rigging manuals, and performs several proponency functions related to Aerial Delivery and Field Services.

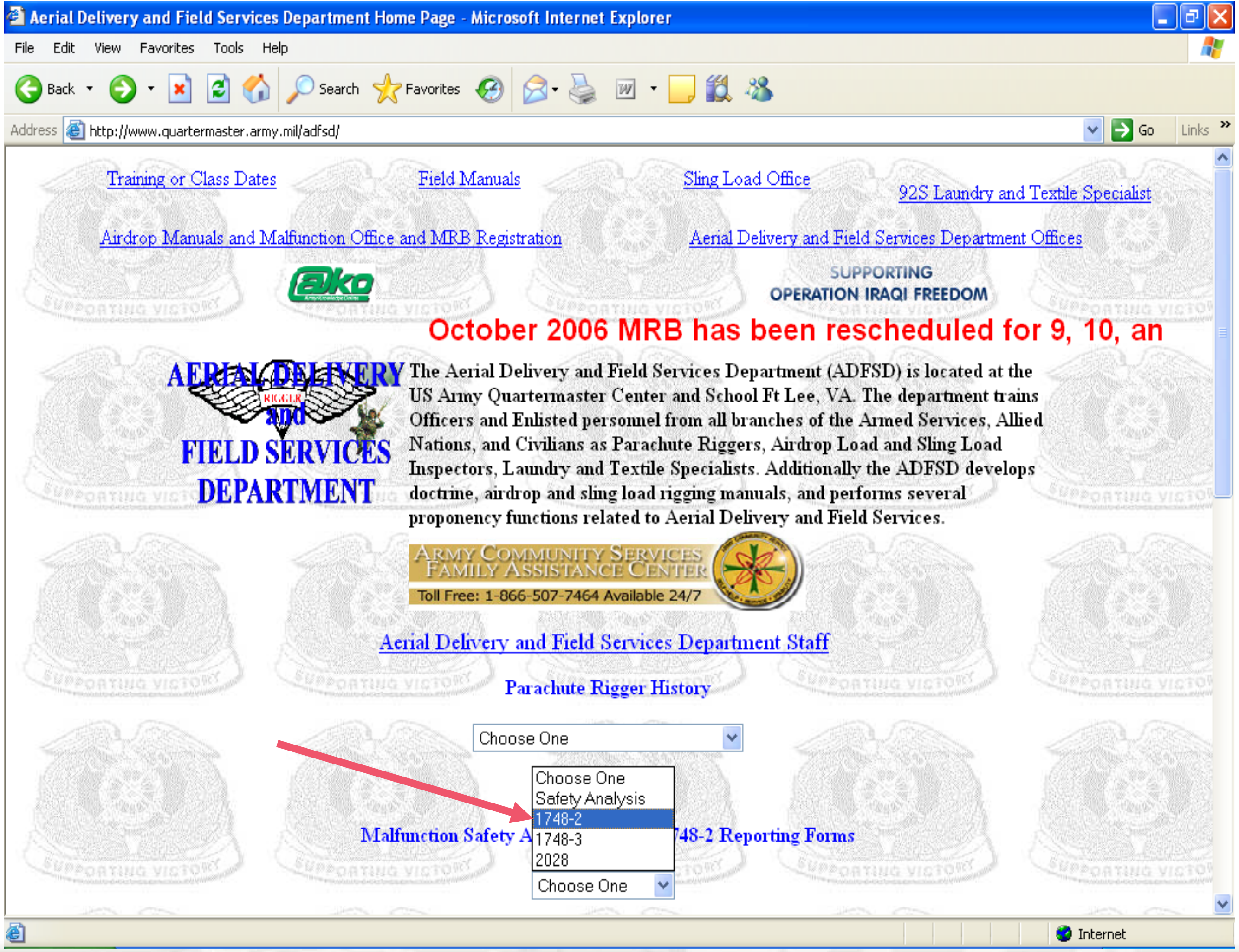
ARMY COMMUNITY SERVICES
FAMILY ASSISTANCE CENTER
Toll Free: 1-866-507-7464 Available 24/7

Aerial Delivery and Field Services Department Staff

Parachute Rigger History

Malfunction Safety Analysis and DD 1748-2 Reporting Forms

# Aerial Delivery and Field


Aerial Delivery and Field Services Department Home Page - Microsoft Internet Explorer
File
Edit
View
Favorites
Tools
Help
Back
Search
Favorites
Address
Go
Links
AERIAL DELIVERY
RIGGER
and
FIELD SERVICES
DEPARTMENT
Internet

Address: http://www.quartermaster.army.mil/adfsd/

Training or Class Dates

Field Manuals

Sling Load Office

92S Laundry and Textile Specialist

Airdrop Manuals and Malfunction Office and MRB Registration

Aerial Delivery and Field Services Department Offices

SUPPORTING OPERATION IRAQI FREEDOM

October 2006 MRB has been rescheduled for 9, 10, an

The Aerial Delivery and Field Services Department (ADFSD) is located at the US Army Quartermaster Center and School Ft Lee, VA. The department trains Officers and Enlisted personnel from all branches of the Armed Services, Allied Nations, and Civilians as Parachute Riggers, Airdrop Load and Sling Load Inspectors, Laundry and Textile Specialists. Additionally the ADFSD develops doctrine, airdrop and sling load rigging manuals, and performs several proponency functions related to Aerial Delivery and Field Services.

ARMY COMMUNITY SERVICES FAMILY ASSISTANCE CENTER
Toll Free: 1-866-507-7464 Available 24/7

Aerial Delivery and Field Services Department Staff

Parachute Rigger History

Choose One

Choose One
Safety Analysis
1748-2
1748-3
2028

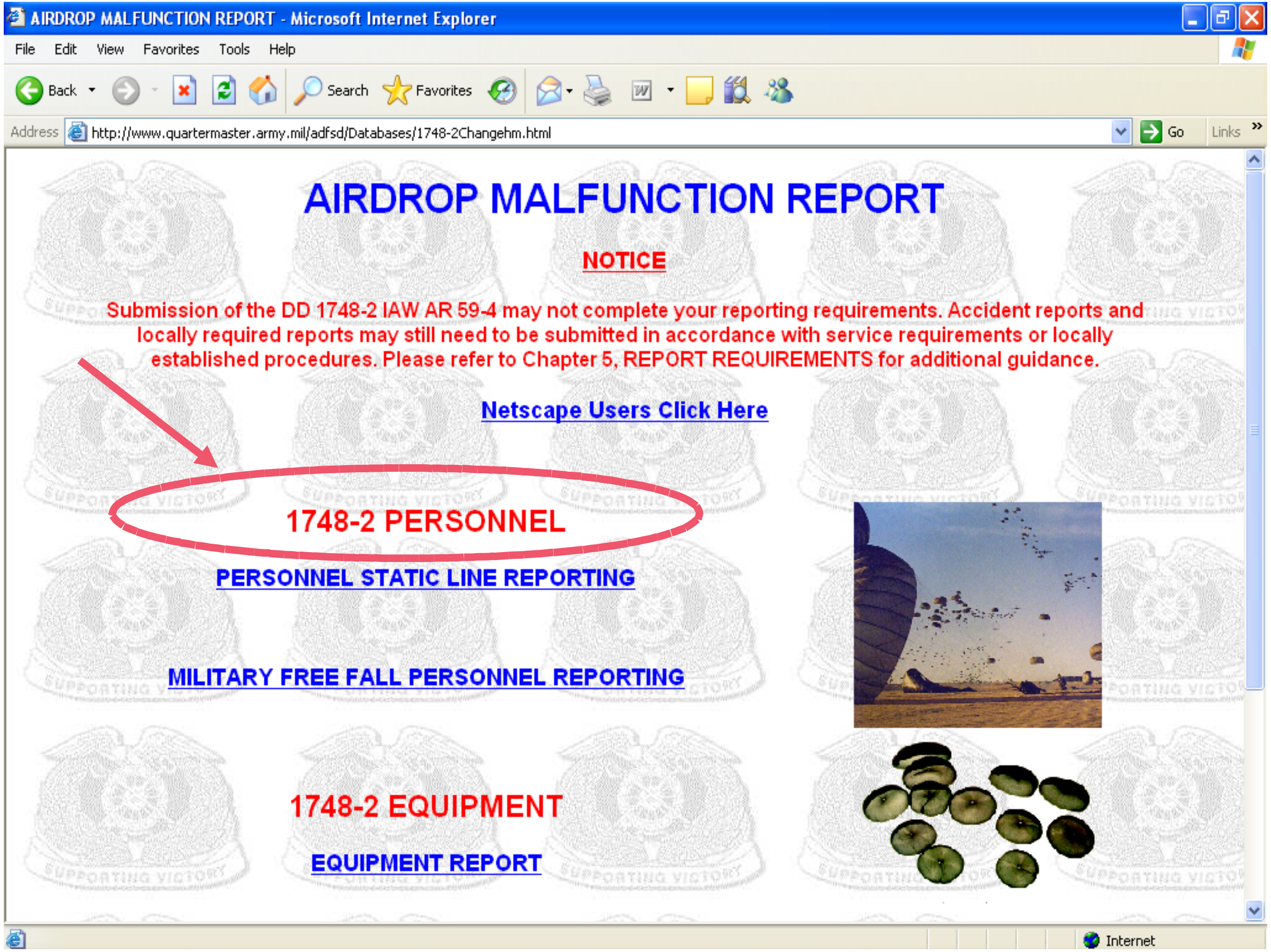
Malfunction Safety A

748-2 Reporting Forms

Choose One

Warrior Logisticians

# Aerial Delivery and Field


AIRDROP MALFUNCTION REPORT - Microsoft Internet Explorer
File
Edit
View
Favorites
Tools
Help
Back
Search
Favorites
Address
Go
Links
Internet

http://www.quartermaster.army.mil/adfsd/Databases/1748-2Changehm.html

AIRDROP MALFUNCTION REPORT

NOTICE

Submission of the DD 1748-2 IAW AR 59-4 may not complete your reporting requirements. Accident reports and locally required reports may still need to be submitted in accordance with service requirements or locally established procedures. Please refer to Chapter 5, REPORT REQUIREMENTS for additional guidance.

Netscape Users Click Here

1748-2 PERSONNEL

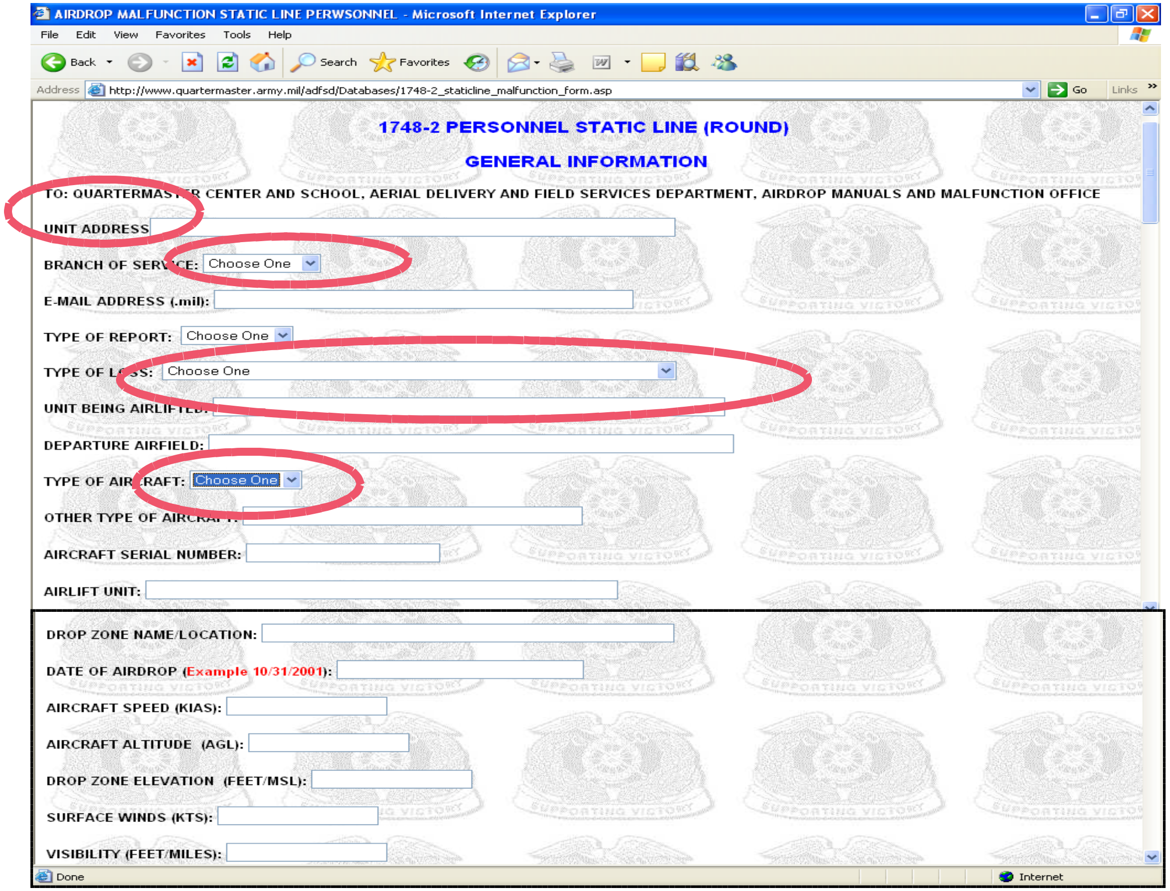
PERSONNEL STATIC LINE REPORTING

MILITARY FREE FALL PERSONNEL REPORTING

1748-2 EQUIPMENT

EQUIPMENT REPORT

# Aerial Delivery and Field


AIRDROP MALFUNCTION STATIC LINE PERWSONNEL - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back
Search
Favorites
Address
Go
Links
Done
Internet

http://www.quartermaster.army.mil/adfsd/Databases/1748-2_staticline_malfunction_form.asp

**1748-2 PERSONNEL STATIC LINE (ROUND)**

**GENERAL INFORMATION**

TO: QUARTERMASTER CENTER AND SCHOOL, AERIAL DELIVERY AND FIELD SERVICES DEPARTMENT, AIRDROP MANUALS AND MALFUNCTION OFFICE

UNIT ADDRESS:

BRANCH OF SERVICE: Choose One

E-MAIL ADDRESS (.mil):

TYPE OF REPORT: Choose One

TYPE OF LOSS: Choose One

UNIT BEING AIRLIFTED:

DEPARTURE AIRFIELD:

TYPE OF AIRCRAFT: Choose One

OTHER TYPE OF AIRCRAFT:

AIRCRAFT SERIAL NUMBER:

AIRLIFT UNIT:

DROP ZONE NAME/LOCATION:

DATE OF AIRDROP (Example 10/31/2001):

AIRCRAFT SPEED (KIAS):

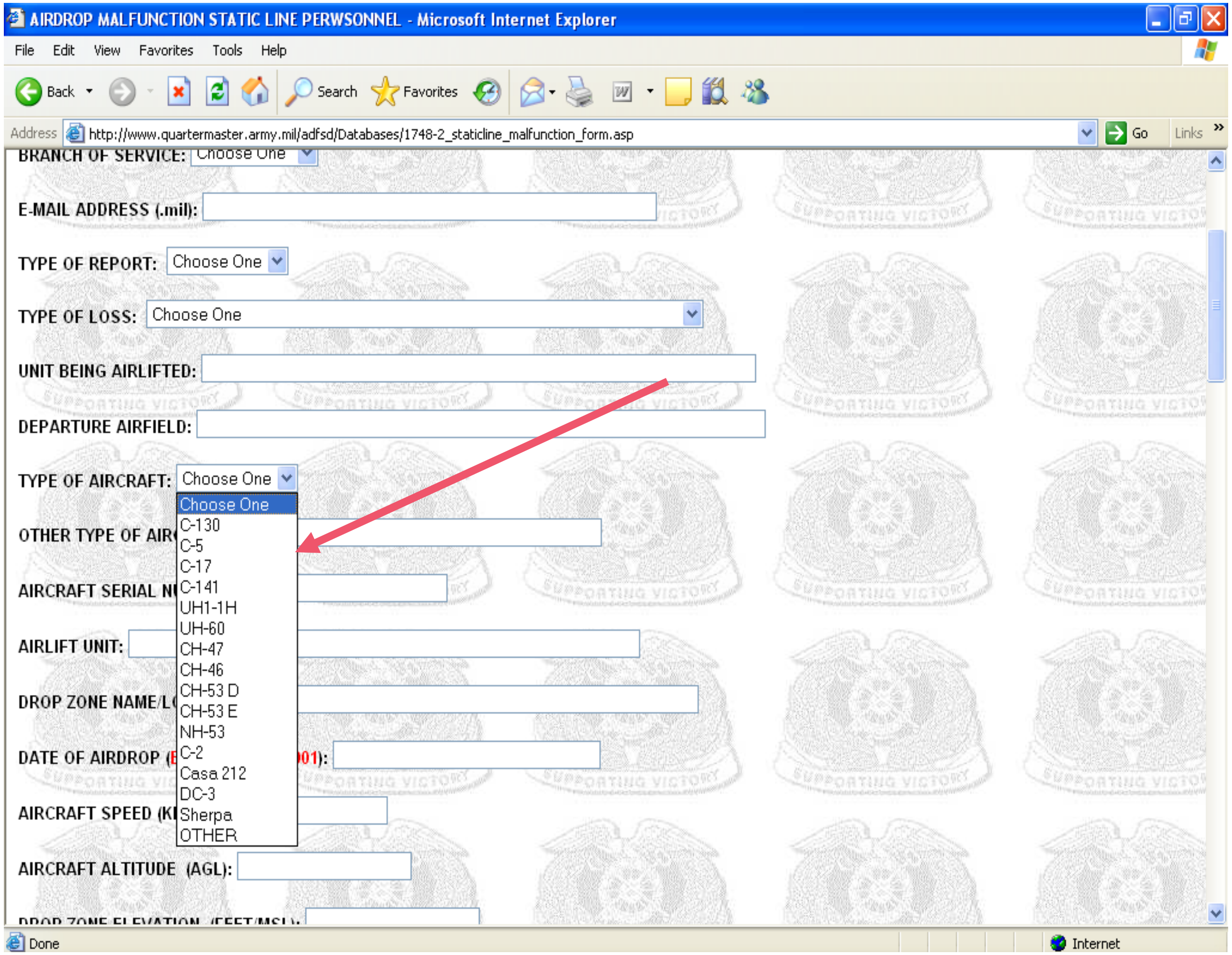
AIRCRAFT ALTITUDE (AGL):

DROP ZONE ELEVATION (FEET/MSL):

SURFACE WINDS (KTS):

VISIBILITY (FEET/MILES):

# Aerial Delivery and Field


File
Edit
View
Favorites
Tools
Help
Back
Search
Favorites
Address
Go
Links
Done
Internet

AIRDROP MALFUNCTION STATIC LINE PERWSONNEL - Microsoft Internet Explorer

http://www.quartermaster.army.mil/adfsd/Databases/1748-2_staticline_malfunction_form.asp

BRANCH OF SERVICE: Choose One

E-MAIL ADDRESS (.mil):

TYPE OF REPORT: Choose One

TYPE OF LOSS: Choose One

UNIT BEING AIRLIFTED:

DEPARTURE AIRFIELD:

TYPE OF AIRCRAFT: Choose One

- Choose One
- C-130
- C-5
- C-17
- C-141
- UH1-1H
- UH-60
- CH-47
- CH-46
- CH-53 D
- CH-53 E
- NH-53
- C-2
- Casa 212
- DC-3
- Sherpa
- OTHER

OTHER TYPE OF AIR

AIRCRAFT SERIAL N

AIRLIFT UNIT:

DROP ZONE NAME/L

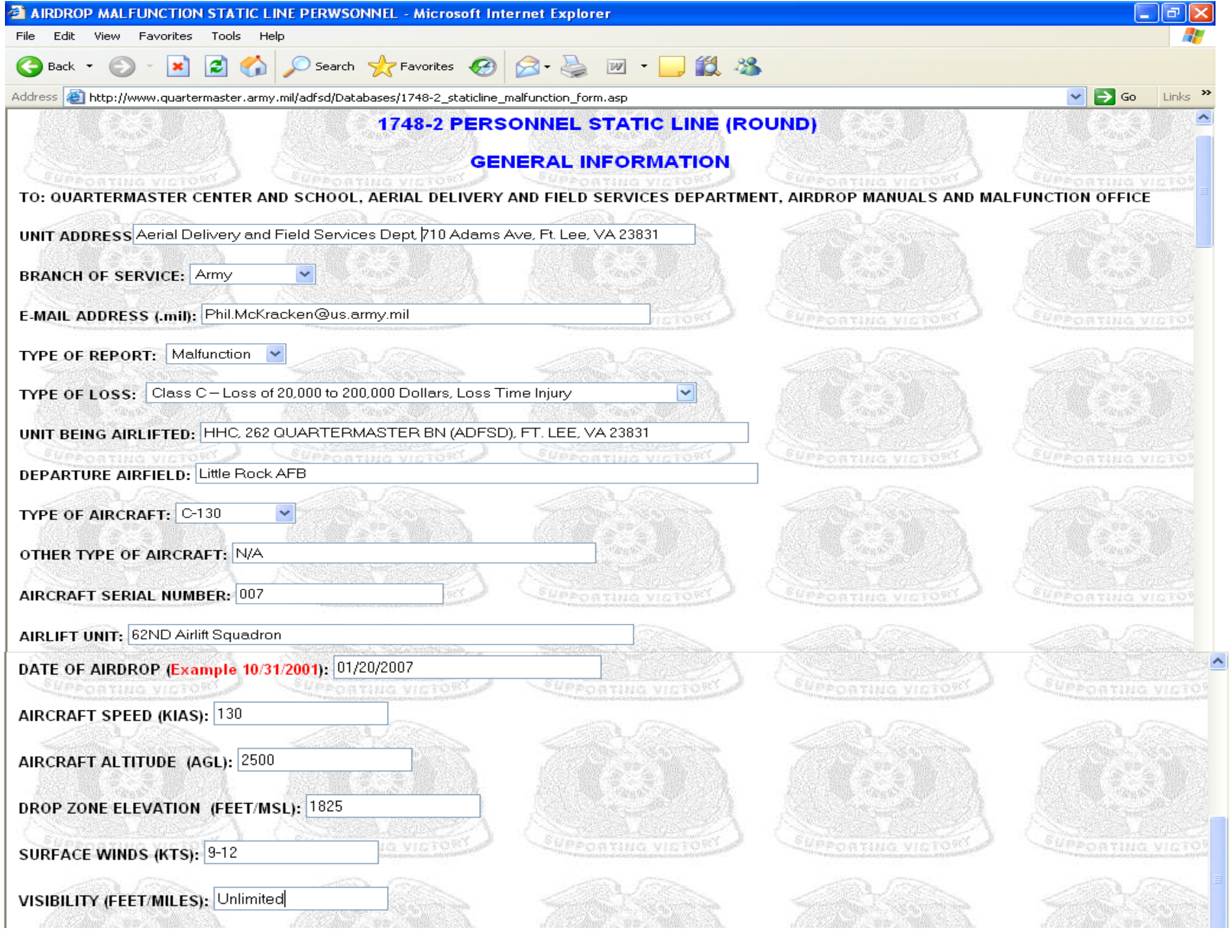
DATE OF AIRDROP ( 01):

AIRCRAFT SPEED (K

AIRCRAFT ALTITUDE (AGL):

DROP ZONE ELEVATION (FEET/MSL):

# Aerial Delivery and Field


AIRDROP MALFUNCTION STATIC LINE PERWSONNEL - Microsoft Internet Explorer
File
Edit
View
Favorites
Tools
Help
Back
Search
Favorites
Address
http://www.quartermaster.army.mil/adfsd/Databases/1748-2_staticline_malfunction_form.asp
Go
Links

## 1748-2 PERSONNEL STATIC LINE (ROUND)

## GENERAL INFORMATION

TO: QUARTERMASTER CENTER AND SCHOOL, AERIAL DELIVERY AND FIELD SERVICES DEPARTMENT, AIRDROP MANUALS AND MALFUNCTION OFFICE

UNIT ADDRESS: Aerial Delivery and Field Services Dept, 710 Adams Ave, Ft. Lee, VA 23831

BRANCH OF SERVICE: Army

E-MAIL ADDRESS (.mil): Phil.McKracken@us.army.mil

TYPE OF REPORT: Malfunction

TYPE OF LOSS: Class C – Loss of 20,000 to 200,000 Dollars, Loss Time Injury

UNIT BEING AIRLIFTED: HHC, 262 QUARTERMASTER BN (ADFSD), FT. LEE, VA 23831

DEPARTURE AIRFIELD: Little Rock AFB

TYPE OF AIRCRAFT: C-130

OTHER TYPE OF AIRCRAFT: N/A

AIRCRAFT SERIAL NUMBER: 007

AIRLIFT UNIT: 62ND Airlift Squadron

DATE OF AIRDROP (Example 10/31/2001): 01/20/2007

AIRCRAFT SPEED (KIAS): 130

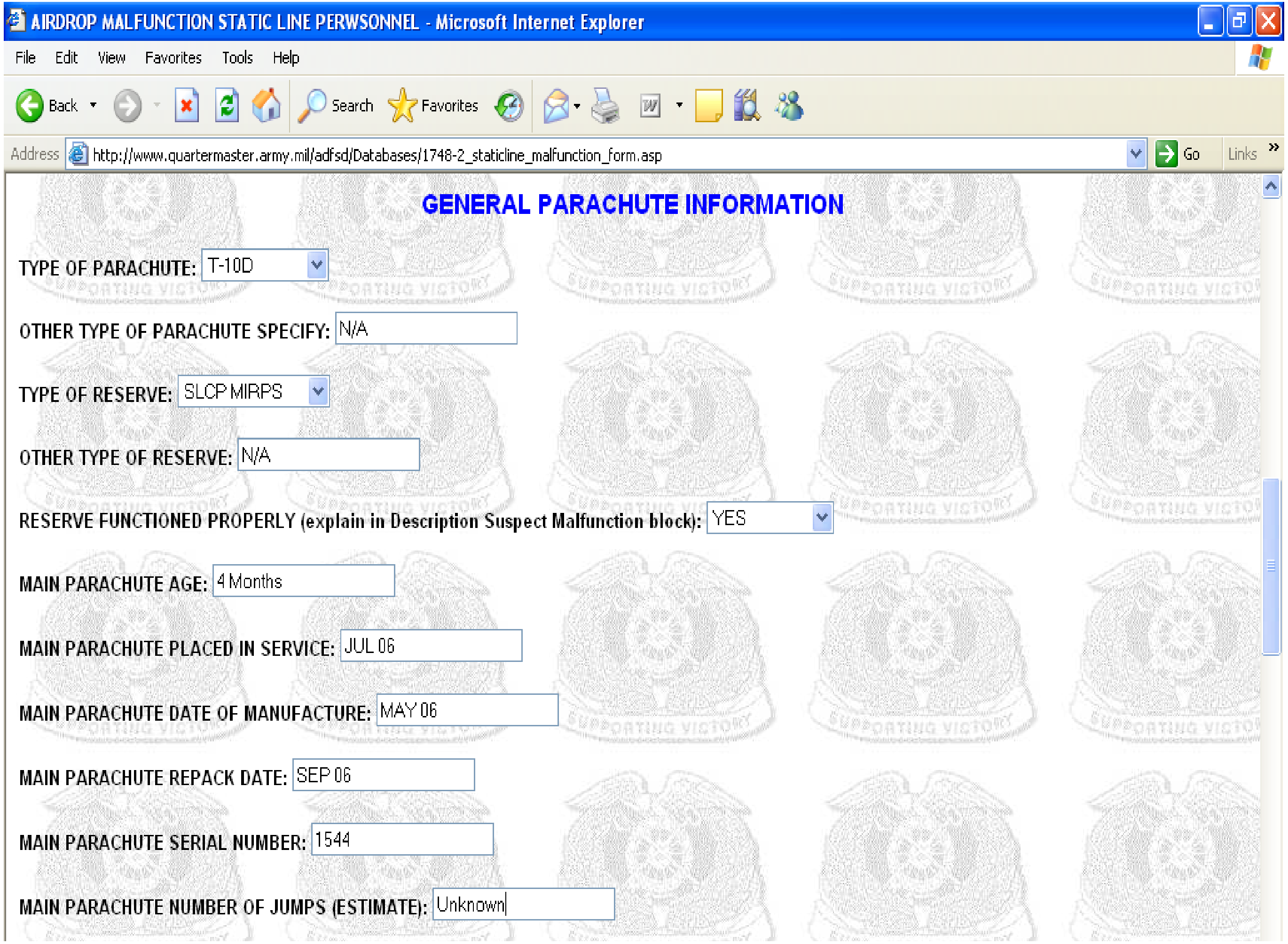
AIRCRAFT ALTITUDE (AGL): 2500

DROP ZONE ELEVATION (FEET/MSL): 1825

SURFACE WINDS (KTS): 9-12

VISIBILITY (FEET/MILES): Unlimited

# Aerial Delivery and Field


File
Edit
View
Favorites
Tools
Help
Back
Search
Favorites
Address
Go
Links

AIRDROP MALFUNCTION STATIC LINE PERWSONNEL - Microsoft Internet Explorer

http://www.quartermaster.army.mil/adfsd/Databases/1748-2_staticline_malfunction_form.asp

## GENERAL PARACHUTE INFORMATION

TYPE OF PARACHUTE: T-10D

OTHER TYPE OF PARACHUTE SPECIFY: N/A

TYPE OF RESERVE: SLCP MIRPS

OTHER TYPE OF RESERVE: N/A

RESERVE FUNCTIONED PROPERLY (explain in Description Suspect Malfunction block): YES

MAIN PARACHUTE AGE: 4 Months

MAIN PARACHUTE PLACED IN SERVICE: JUL 06

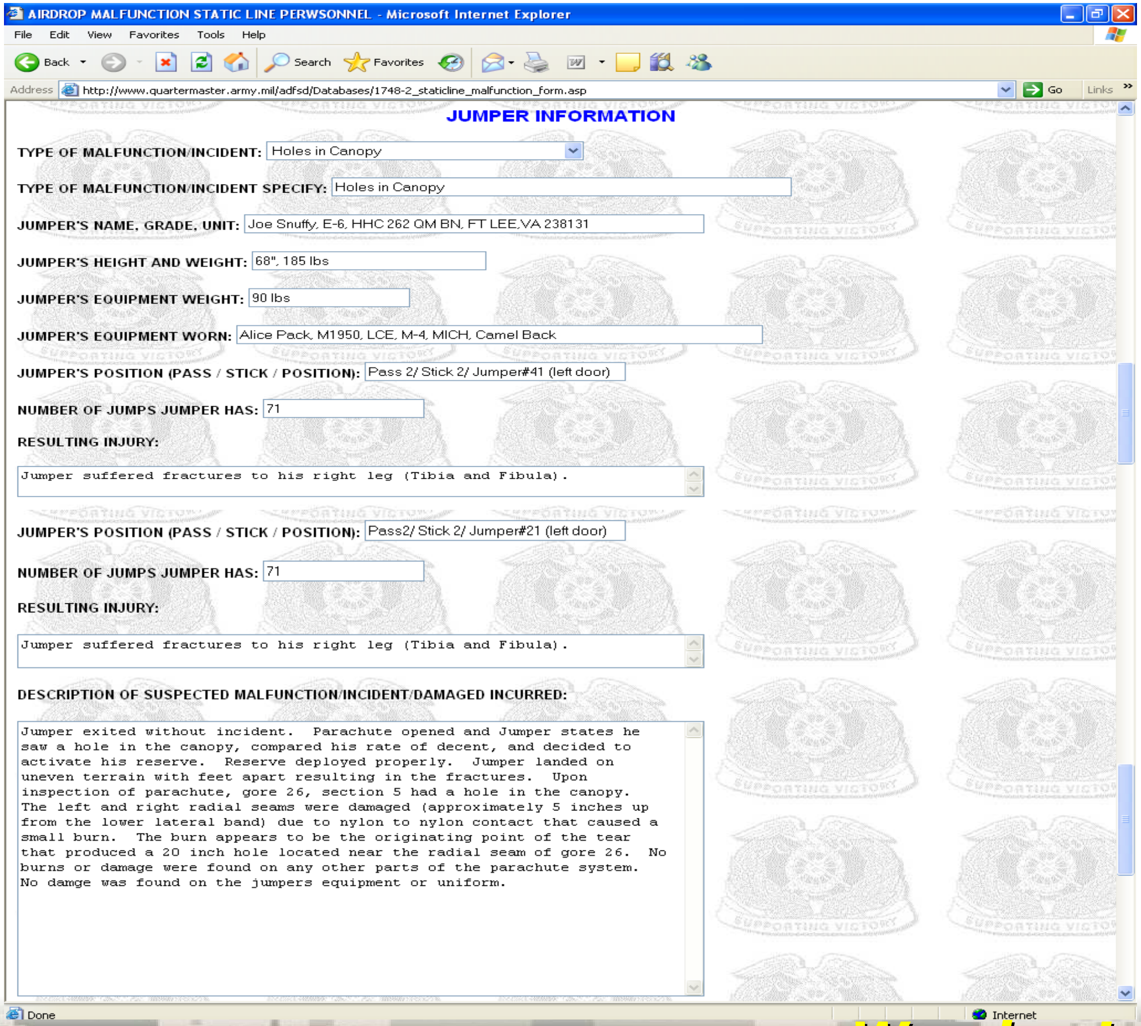
MAIN PARACHUTE DATE OF MANUFACTURE: MAY 06

MAIN PARACHUTE REPACK DATE: SEP 06

MAIN PARACHUTE SERIAL NUMBER: 1544

MAIN PARACHUTE NUMBER OF JUMPS (ESTIMATE): Unknown

# Aerial Delivery and Field



http://www.quartermaster.army.mil/adfsd/Databases/1748-2_staticline_malfunction_form.asp

**JUMPER INFORMATION**

**TYPE OF MALFUNCTION/INCIDENT:** Holes in Canopy

**TYPE OF MALFUNCTION/INCIDENT SPECIFY:** Holes in Canopy

**JUMPER'S NAME, GRADE, UNIT:** Joe Snuffy, E-6, HHC 262 QM BN, FT LEE,VA 238131

**JUMPER'S HEIGHT AND WEIGHT:** 68", 185 lbs

**JUMPER'S EQUIPMENT WEIGHT:** 90 lbs

**JUMPER'S EQUIPMENT WORN:** Alice Pack, M1950, LCE, M-4, MICH, Camel Back

**JUMPER'S POSITION (PASS / STICK / POSITION):** Pass 2/ Stick 2/ Jumper#41 (left door)

**NUMBER OF JUMPS JUMPER HAS:** 71

**RESULTING INJURY:**

Jumper suffered fractures to his right leg (Tibia and Fibula).

**JUMPER'S POSITION (PASS / STICK / POSITION):** Pass2/ Stick 2/ Jumper#21 (left door)

**NUMBER OF JUMPS JUMPER HAS:** 71

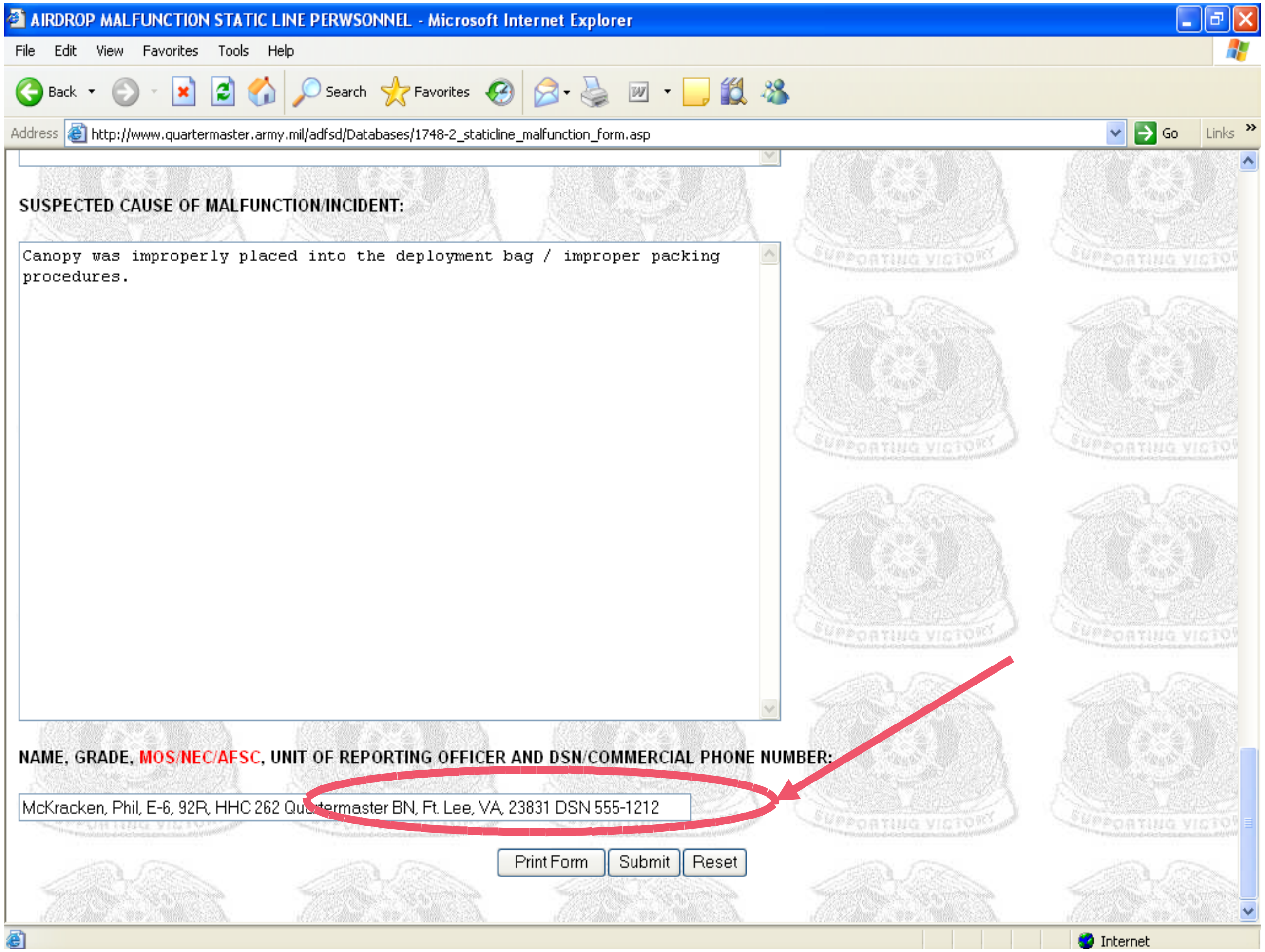
**RESULTING INJURY:**

Jumper suffered fractures to his right leg (Tibia and Fibula).

**DESCRIPTION OF SUSPECTED MALFUNCTION/INCIDENT/DAMAGED INCURRED:**

Jumper exited without incident. Parachute opened and Jumper states he saw a hole in the canopy, compared his rate of decent, and decided to activate his reserve. Reserve deployed properly. Jumper landed on uneven terrain with feet apart resulting in the fractures. Upon inspection of parachute, gore 26, section 5 had a hole in the canopy. The left and right radial seams were damaged (approximately 5 inches up from the lower lateral band) due to nylon to nylon contact that caused a small burn. The burn appears to be the originating point of the tear that produced a 20 inch hole located near the radial seam of gore 26. No burns or damage were found on any other parts of the parachute system. No damge was found on the jumpers equipment or uniform.

# Aerial Delivery and Field


AIRDROP MALFUNCTION STATIC LINE PERWSONNEL - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back
Search
Favorites
Address
Go
Links
Internet

http://www.quartermaster.army.mil/adfsd/Databases/1748-2_staticline_malfunction_form.asp

**SUSPECTED CAUSE OF MALFUNCTION/INCIDENT:**

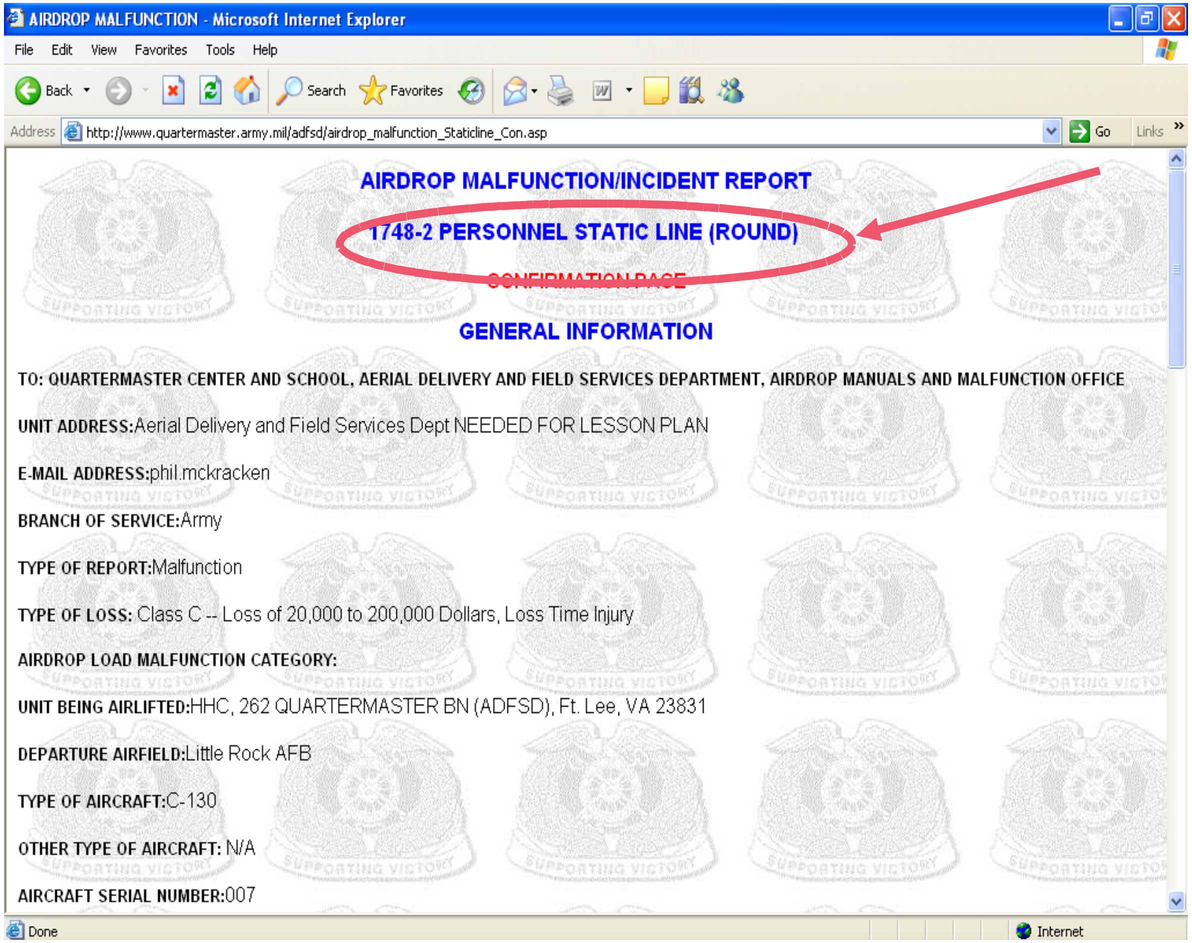
Canopy was improperly placed into the deployment bag / improper packing procedures.

**NAME, GRADE, MOS/NEC/AFSC, UNIT OF REPORTING OFFICER AND DSN/COMMERCIAL PHONE NUMBER:**

McKracken, Phil, E-6, 92R, HHC 262 Quartermaster BN, Ft. Lee, VA, 23831 DSN 555-1212

Print Form
Submit
Reset

# Aerial Delivery and Field


AIRDROP MALFUNCTION - Microsoft Internet Explorer
File
Edit
View
Favorites
Tools
Help
Back
Search
Favorites
Go
Links
Done
Internet

Address http://www.quartermaster.army.mil/adfsd/airdrop_malfunction_Staticline_Con.asp

**AIRDROP MALFUNCTION/INCIDENT REPORT**

**1748-2 PERSONNEL STATIC LINE (ROUND)**

**CONFIRMATION PAGE**

**GENERAL INFORMATION**

**TO: QUARTERMASTER CENTER AND SCHOOL, AERIAL DELIVERY AND FIELD SERVICES DEPARTMENT, AIRDROP MANUALS AND MALFUNCTION OFFICE**

**UNIT ADDRESS:**Aerial Delivery and Field Services Dept NEEDED FOR LESSON PLAN

**E-MAIL ADDRESS:**phil.mckracken

**BRANCH OF SERVICE:**Army

**TYPE OF REPORT:**Malfunction

**TYPE OF LOSS:** Class C -- Loss of 20,000 to 200,000 Dollars, Loss Time Injury

**AIRDROP LOAD MALFUNCTION CATEGORY:**

**UNIT BEING AIRLIFTED:**HHC, 262 QUARTERMASTER BN (ADFSD), Ft. Lee, VA 23831

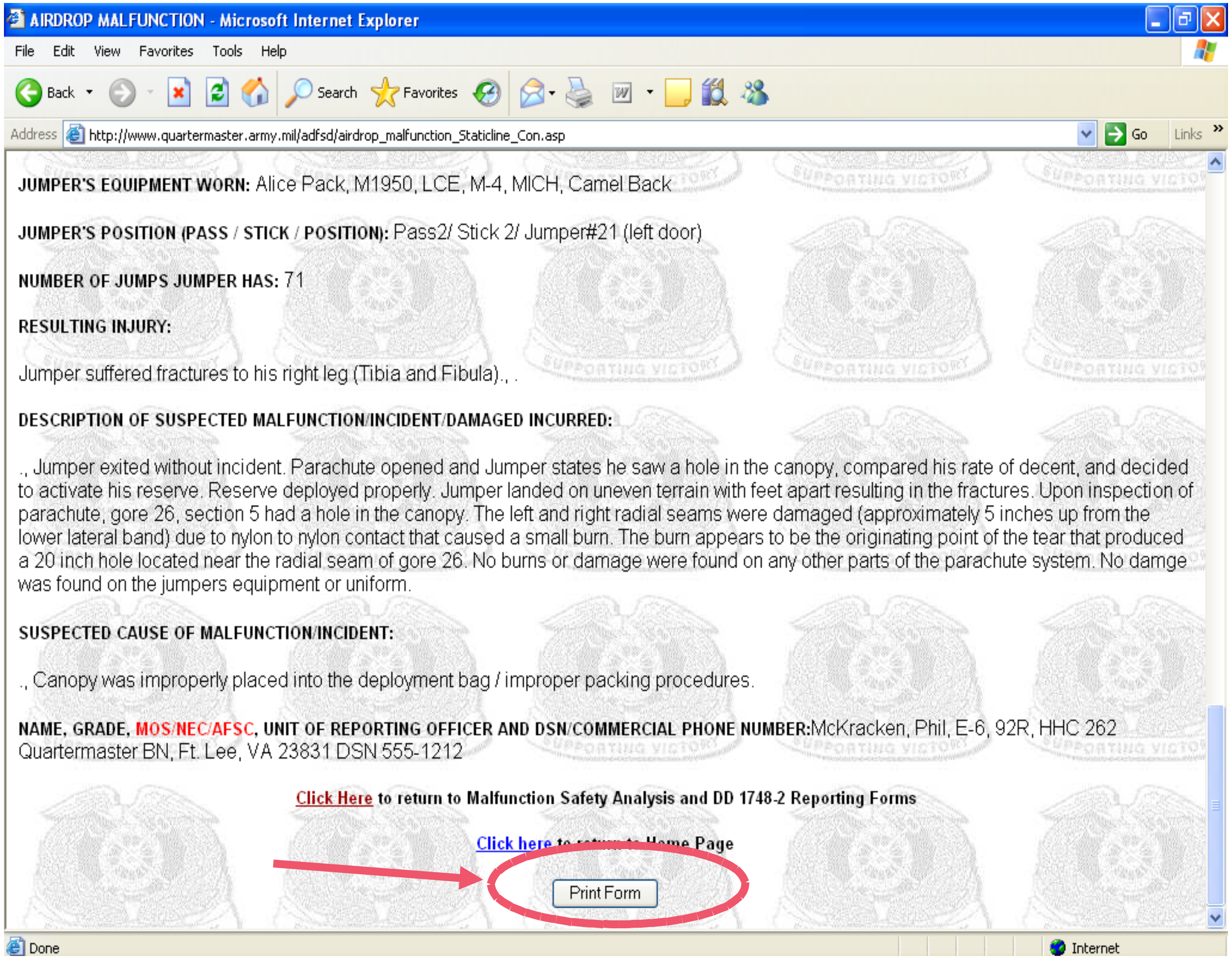
**DEPARTURE AIRFIELD:**Little Rock AFB

**TYPE OF AIRCRAFT:**C-130

**OTHER TYPE OF AIRCRAFT:** N/A

**AIRCRAFT SERIAL NUMBER:**007

# Aerial Delivery and Field


AIRDROP MALFUNCTION - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back
Search
Favorites
Address
http://www.quartermaster.army.mil/adfsd/airdrop_malfunction_Staticline_Con.asp
Go
Links
Done
Internet

**JUMPER'S EQUIPMENT WORN:** Alice Pack, M1950, LCE, M-4, MICH, Camel Back

**JUMPER'S POSITION (PASS / STICK / POSITION):** Pass2/ Stick 2/ Jumper#21 (left door)

**NUMBER OF JUMPS JUMPER HAS:** 71

**RESULTING INJURY:**

Jumper suffered fractures to his right leg (Tibia and Fibula)., .

**DESCRIPTION OF SUSPECTED MALFUNCTION/INCIDENT/DAMAGED INCURRED:**

., Jumper exited without incident. Parachute opened and Jumper states he saw a hole in the canopy, compared his rate of decent, and decided to activate his reserve. Reserve deployed properly. Jumper landed on uneven terrain with feet apart resulting in the fractures. Upon inspection of parachute, gore 26, section 5 had a hole in the canopy. The left and right radial seams were damaged (approximately 5 inches up from the lower lateral band) due to nylon to nylon contact that caused a small burn. The burn appears to be the originating point of the tear that produced a 20 inch hole located near the radial seam of gore 26. No burns or damage were found on any other parts of the parachute system. No damge was found on the jumpers equipment or uniform.

**SUSPECTED CAUSE OF MALFUNCTION/INCIDENT:**

., Canopy was improperly placed into the deployment bag / improper packing procedures.

**NAME, GRADE, MOS/NEC/AFSC, UNIT OF REPORTING OFFICER AND DSN/COMMERCIAL PHONE NUMBER:**McKracken, Phil, E-6, 92R, HHC 262 Quartermaster BN, Ft. Lee, VA 23831 DSN 555-1212

Click Here **to return to Malfunction Safety Analysis and DD 1748-2 Reporting Forms**

Click here **to return to Home Page**

Print Form

# Aerial Delivery and Field Services Department

***Check on Learning***

# Aerial Delivery and Field Services Department

***Question: What is the name and Number of the form used for reporting Malfunctions to Ft. Lee?***

- **DD Form 1748-2 (Airdrop Malfunction Report)**

# Aerial Delivery and Field Services Department

***Question: What is the timeline for a malfunction report due to Fort Lee for:***

***- A malfunction other than a fatality?***

***-An initial report of a serious injury or death?***

***- A fatality investigation?***

- **5 workdays after the malfunction occurs**
- **Within 12 hours of the malfunction**
- **10 calendar days after completion of the fatality investigation**

# Summary

- **Duties of Malfunction Officer/NCO**
- **Procedures for Malfunction Investigation – No Serious Injuries**
- **Procedures for Malfunction Investigation – Serious Injury or Death**
- **Investigation of Low Velocity Airdrop Loads**
- **Reporting Procedures**

# Aerial Delivery and Field Services Department

***Questions ?***